UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,938	11/13/2003	Yoshiki Ishii	03560.003397	6571

5514   7590   08/25/2008
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
WERNER, DAVID N

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
08/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<table>
<tr><td rowspan="2"></td><td>Application No.</td><td>Applicant(s)</td></tr>
<tr><td>10/705,938</td><td>ISHII, YOSHIKI</td></tr>
<tr><td rowspan="2">Office Action Summary</td><td>Examiner</td><td>Art Unit</td></tr>
<tr><td>David N. Werner</td><td>2621</td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,10-17 and 26-30* is/are pending in the application.

    4a) Of the above claim(s) *10-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-7,15-17 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20080710*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office action for US Patent Application 10/705,938 is responsive to communications filed 27 May 2008 and the Telephonic Interview of 17 June 2008, in reply to the Non-Final Rejection of 26 February 2008. Currently, claims 1, 4-7, 10-17, and 26-30 are pending. Of those, claims 10-14 are withdrawn from consideration.

2.   In the previous Office action, claims 1, 7, 15, 17, and 26-30 were rejected under 35 U.S.C. 103(a) as obvious over US 6,324,217 B1 (Gordon) in view of DE 10,035,109 A1 (Cho et al.). Claims 4-6 and 16 were rejected under 35 U.S.C. 103(a) as obvious over Gordon in view of Cho et al. and JP 2000-050263 A (Asada et al.).

Response to Arguments

3.   Applicant's arguments, see pages 10 and 11, filed 27 May 2008, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. 103(a) in view of Gordon and Cho et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. As discussed in the 17 June Interview, the present invention distinguishes from the prior art in that the present invention generates a still image as a series of B frames whereas the Gordon reference, in particular, produces a still image as a series of P frames. However, upon further consideration, a new ground(s) of rejection is made in view of "MPEG-2 Compliant Trick Play Over a Digital Interface" (van Gassel et al.).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 7, 15, 17, and 26-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US Patent 6,324,217 B1 (Gordon) in view of DE 10,035,109 A1 (Cho

et al.), relying on US 6,956,971 B1 for translation, and "MPEG-2 Compliant Trick Play

Over a Digital Interface" (van Gassel et al.).

Gordon teaches a system for producing a Group of Pictures (GOP) of replicated

images. Regarding claim 1, figure 1 of Gordon shows an embodiment of the replication

apparatus (column 3: lines 12-18). This apparatus includes video frame encoder 110

(column 3: lines 19-28), which has a buffer 121 that stores representative still image

frames. This buffer corresponds with the claimed "memory unit". Additionally, since

encoder 110 is an MPEG or MPEG2 encoder, it inherently quantizes video frames as

part of the encoding process (column 6: lines 8-19). Then, encoder 110 corresponds

with the claimed "quantization unit". Next, GOP replicator 120 encodes a GOP

structure comprising the still images as an I frame followed by a plurality of predictive

frames that contain no data, that is, no change from the previous I frame (column 3:

lines 48-65). In the example given, the freeze-frame GOP structure contains an I frame

followed by 14 P frames. A DURATION control signal can be used to produce an

extended freeze frame from multiple GOPs (column 3: line 66–column 4: line 4). This

corresponds with the claimed "encoding unit".   However, Gordon does not teach adjusting quantization for motion images and still images.

Cho et al. teaches a system that transmits a moving picture and still pictures extracted from the moving picture in a higher quality than the frames in the moving picture. Regarding claim 1, in one embodiment of Cho et al., as seen in figure 4, a user may choose to set the quality of a still picture according to a desired transmission time (column 7: lines 54-60). The quantizer value for a still picture is lower than the quantizer value for a moving picture (column 7: lines 32-34). Then, core part 300 of Cho et al., which takes as input the user selected image quality parameter and performs quantizing based on this parameter (column 6: lines 27-37), corresponds with the claimed "control unit".

Gordon discloses a majority of the claimed invention except for specifying the reduction of a quantization parameter for still image encoding. Cho et al. teaches that it was known to decrease quantization size in a still image mode. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the present invention to modify the encoder of Gordon et al. to encode still images as motion images with a small quantization step size, as taught by Cho et al., since Cho et al. states in column 6: lines 50-59 that such a modification would increase image quality. However, Cho et al. does not satisfy the limitation of claim 1 of generating the inter-coded data as bi-directionally predictive frames.

Van Gassel et al. teaches a system for modifying an encoded MPEG-2 stream for greater compatibility with trick play modes such as fast or slow playback. The still

image display of the present invention may be considered a special case of a slow trick

play.   Regarding claim 1, in van Gassel et al., a slow play mode is achieved by

repeating I frames and predictive frames (pg. 171: column 1). The repeated predictive

frames are specially modified frames with zero motion vectors and no-coded or skipped

macroblocks, thus indicating no difference from an I frame (pg. 170: column 2–pg. 171:

column 1). In an MPEG-2 mode in which B frames are enabled such as a Main Profile,

using only P frames as the repeated predictive frames is problematic, since a displayed

B frame may be decoded from the wrong repeated reference P frames (pg. 171: column

1). To fix this, repetition P frames are instead re-coded as repetition B frames (pg. 171:

column 1) as unidirectional B frames in the forward direction (pg. 171: column 2).

Gordon, in combination with Cho et al., discloses the present invention except for

encoding a series of repeated frames as bidirectional frames from previously-coded

data. Van Gassel et al. teaches that it was known to encode special repetition B frames

in a trick-mode in which frames are repeated. Therefore, it would have been obvious to

one having ordinary skill in the art at the time the invention was made to incorporate the

repetition B frame coder of van Gassel et al. in the coder of Gordon, since van Gassel

et al. states in page 171: column 1 that such a modification would increase the accuracy

of decoding the frames at playback by preventing predictive frames from relying on the

wrong reference frames.

Regarding claims 7, 17, and 29, in Gordon, a NULL forward predictive coded

frame comprises a "zero motion vector frame" (column 3: lines 36-47), and so has

suppressed or prohibited motion vectors.

Regarding claims 15 and 28, in one embodiment of Cho et al., a fixed low quantizing value is used to transmit still pictures, and a relatively high, variable quantizing value is used to transmit moving pictures (column 7: lines 26-33). The fixed quantizing value corresponds with the claimed fixed "quantization characteristic value" for still-image data.

Regarding claims 26, 27, and 30, the examiner takes Official Notice that it would have been obvious to one having ordinary skill in the art at the time the invention was made to record encoded still images or motion images on a recording medium, to enable further viewing or editing at a time later than encoding.

6.   Claims 4-6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon in view of Cho et al as applied to claims 1 and 15 above, and further in view of Japanese Patent Application Publication 2000-050263 A (Asada et al.). Claim 4 is directed to performing quantization based on the product of a quantization matrix and a characteristic value, and claim 16 is directed to storing a quantization characteristic value in a memory. Cho et al. does not teach these limitations.

Asada et al. teaches a digital camera that can encode or decode both motion images and still images (abstract), in which the quantization unit for motion images and still images is shared (paragraphs 0040-0044). Regarding claim 4, figure 7 of Asada et al. shows the quantizer. The quantization Q for each DCT value in a block is given by the formula $Q = \dfrac{16 \times D_{(i,j)}}{Qs \times W_{(i,j)}}$, where D is the DCT coefficient for frequency (i,j), Qs is the

quantization characteristic, and W is the value in a quantization matrix for frequency (i,j) (paragraph 0041).

Regarding claim 5, in Asada et al., Qs controls the number of "generating signs", or non-zero quantization values. The examiner takes Official Notice that it was well known in the art at the time of the present invention that adjusting a quantization step size changes the quality of a compressed image. Since Qs is in the denominator of the value of the formula for quantized value Q, a smaller value of Qs yields a higher value of Q, particularly in higher-frequency AC DCT values, and increasing the quality of the compressed image. Note that the phrase "dosage child-ized table" throughout the machine translation of Asada et al., provided with the Non-Final Rejection of 13 April 2007, is a mistranslation of the phrase 「量子化」 which should read "quantization table", and has no meaning regarding quantization step size.

Regarding claim 6, in Asada et al., motion image processing and still image processing use different quantization tables. Figure 10 shows an embodiment of Asada et al. in which two quantization tables are stored in a memory (paragraph 0045). In motion processing, field A stores an Intra quantization table, and field B stores an Inter quantization table. In still image processing, field A stores a Luminance quantization table, and field B stores a Chrominance quantization table (paragraph 0048).

Regarding claim 16, in Asada et al., the quantization tables for still image coding and motion image coding are stored in a memory (paragraph 0048).

Gordon, in combination with Cho et al. and van Gassel et al., discloses the claimed invention except for quantizing motion images and still images based on

quantization tables. Asada et al. teaches that it was known to vary the quantization parameters according to pre-defined tables for still images and motion images. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the quantization method of Asada et al. into the encoder of Gordon or Cho et al., since Asada states in paragraph 0050 that such a modification would reduce the time to switch between motion image encoding and still image encoding.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Werner whose telephone number is (571)272-9662. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. N. W./
Examiner, Art Unit 2621

/Mehrdad Dastouri/
Supervisory Patent Examiner, Art Unit 2621